



Chicago Metropolitan
Agency for Planning

Congestion Reduction Demonstration for Metropolitan Chicago

Presented February 13, 2008

by Tom Murtha

Senior Planner for Strategic Initiatives

tmurtha@cmap.illinois.gov

The Congestion Problem

Urban Congestion Report Comparison, August - October, 2007

Measure	Chicago Region	Chicago Rank	National Composite	Explanation of Measurement
Congested Hours	13.04	Worst	6:12	Hours per day when 20% of system is congested
Travel Time Index	1.49	Worst	1.348	Ratio of peak-period travel time to free-flow travel time
Planning Time Index	2.07	Second Worst	1.755	Factor showing extra time to set aside for on-time arrivals because of travel time variation

Source: USDOT *Urban Congestion Report*, August - October, 2007, National Executive Summary, Final.

The Cost of Congestion

Cost Category	Annual Estimated Cost (\$ Billions)
Time Delays/Excessive Fuel Costs	4.3
Productivity Losses	2.1
Environmental Losses	0.4
Safety Losses	0.5
Costs of Cargo Delays	0.2
Unreliability Losses	2.1
Airline and Railroad Congestion Costs	1.4
Total Chicago Congestion Costs	11.0

Wells, USDOT

2030 Regional Transportation Plan Capital Element Update

Recommendation Category	Typical Projects	Capital Allocation
Management	Management and Operations, Maintenance, Reconstruction	\$47B (72%)
Committed	Projects Under Construction	\$4B (5%)
Strategic	Rail Freight, Bicycle/Pedestrian, Arterial, Transit	\$5B (8%)
Major Capital	New Transportation Corridors, System Additions	\$9B (15%)
Total		\$65B

Addressing Congestion through Infrastructure is Expensive

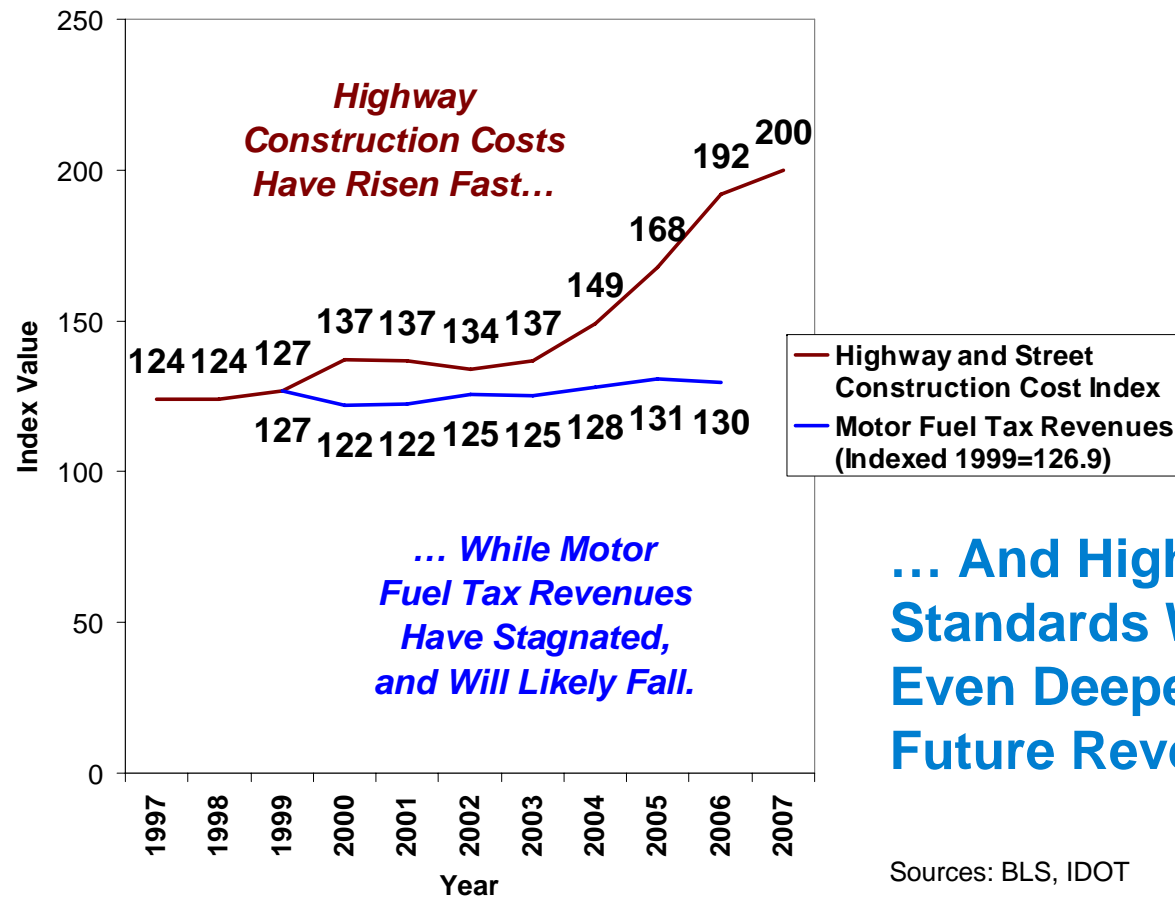


Red Line:
\$282 Million;

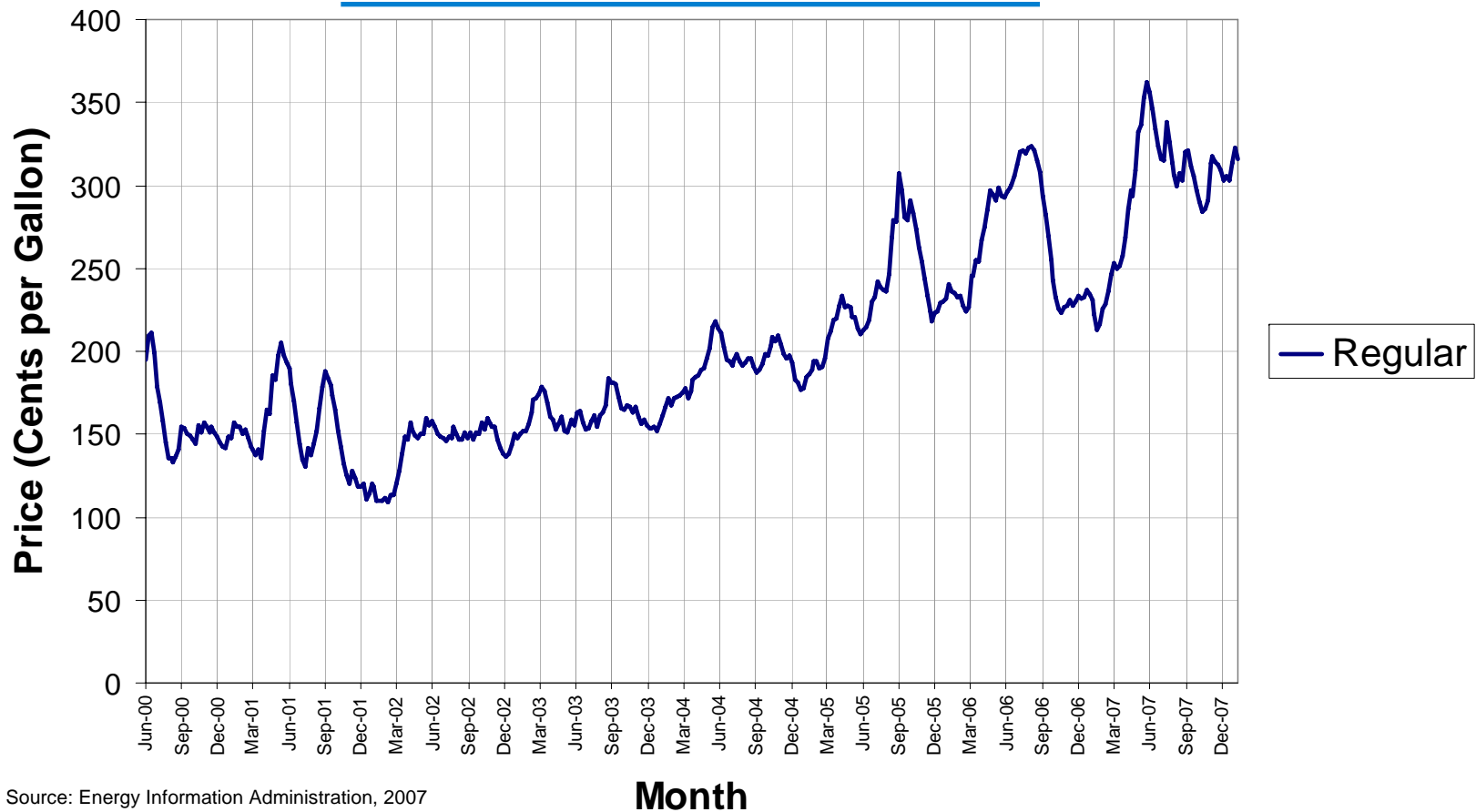
Dan Ryan
Expressway:
\$975 Million

Photo: IDOT

Flat Revenues and Construction Inflation Constrain Our Ability to Add Infrastructure...



Weekly Retail Gasoline Prices, Regular Grade, Chicago, 2000-2007



Transportation – A Summary of Some Key Challenges

- Too many cars for available infrastructure
- Congestion over a Large Area, for Substantial Parts of the Day, with High Economic Costs
- Falling Revenues for Some Key Fund Sources
- Escalating Construction Expenses
- Environmental Concerns

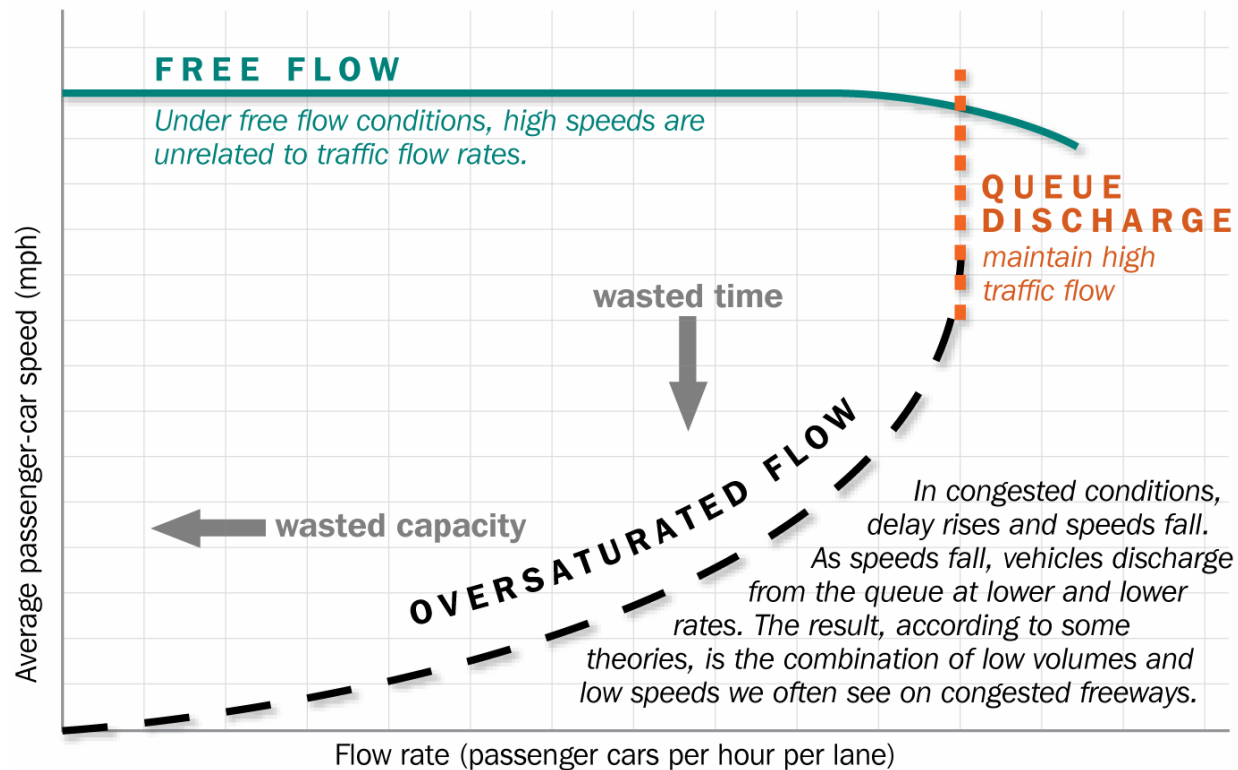
Why Consider Congestion Pricing?

Congestion pricing, when properly implemented, works on highways by using price to reduce the demand to no more than 1500-1700 vehicles per hour per lane, assuring free-flow speeds and limiting congestion.

Prices can be fixed by facility or time of day, or can be responsive to real-time conditions.

Why Consider Congestion Pricing?

Freeway Traffic Flow Theory

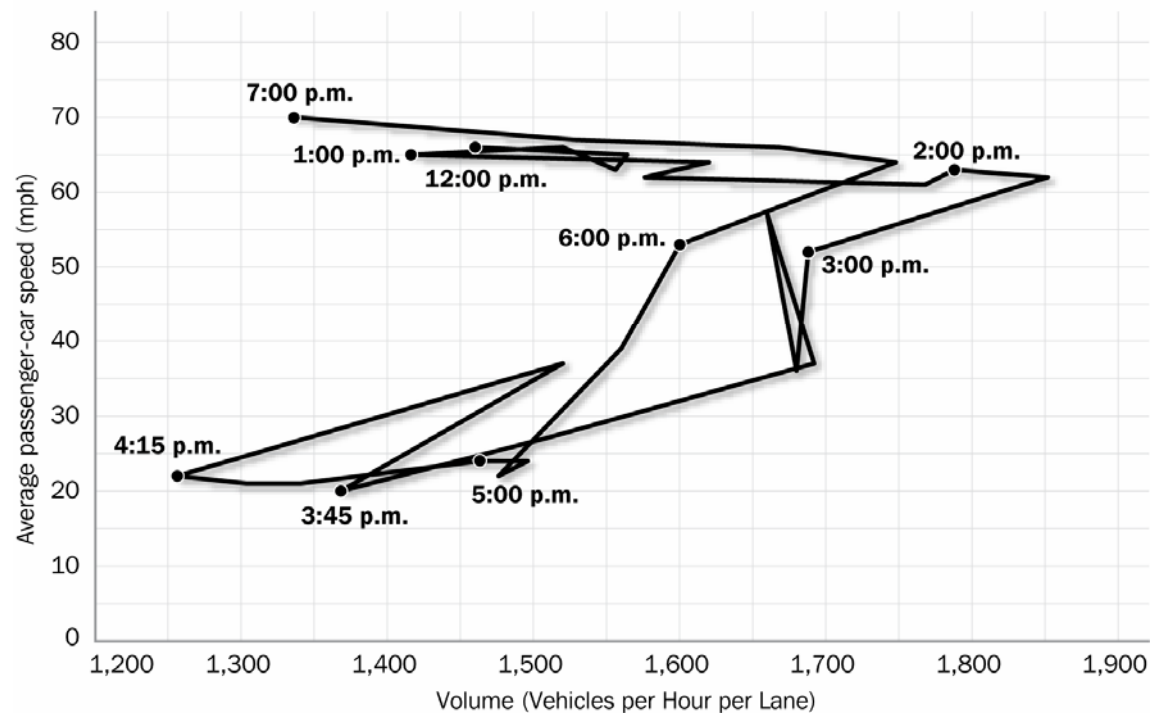


Source: Adapted from Highway Capacity Manual 2000 Exhibit 13.4

Why Consider Congestion Pricing?

Freeway Traffic Flow Data Sample

Speed by volume and time of day on I-290 (April 23, 2007)



Source: Traffic.com

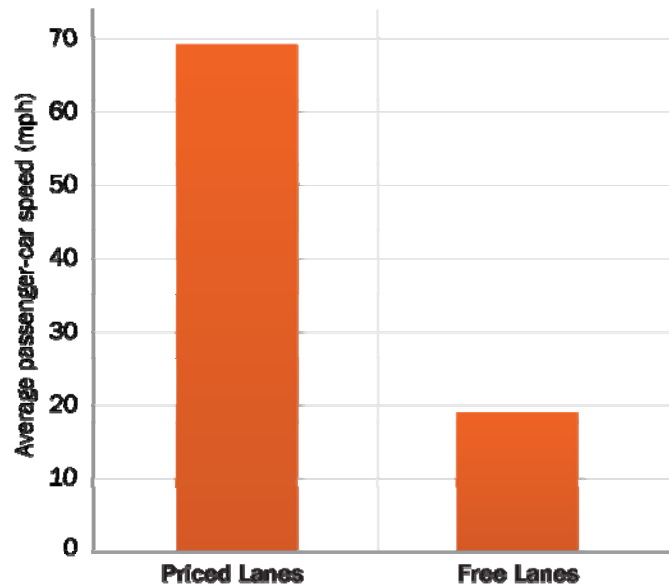
Why Consider Congestion Pricing?

Comparison of Speeds and Vehicle Throughput

on lanes with and without congestion pricing, State Route 91, California

Speed

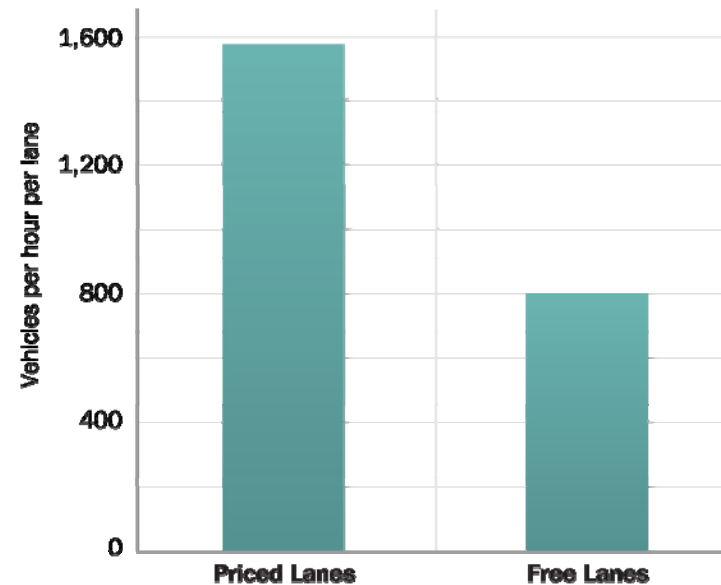
Traffic speeds during rush hours on State Route 91



Source: USDOT's Congestion Pricing Primer

Throughput

Peak period vehicle throughput during the hour with heaviest traffic on State Route 91

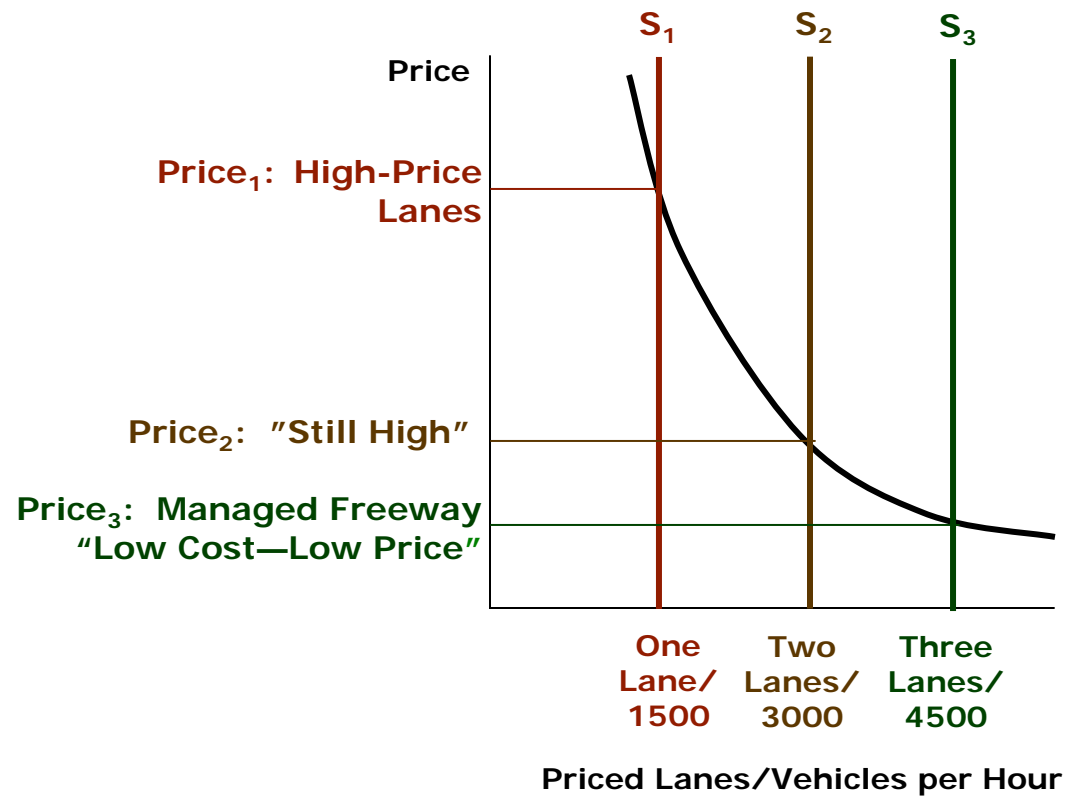


Source: USDOT's Congestion Pricing Primer

Corridor Approach

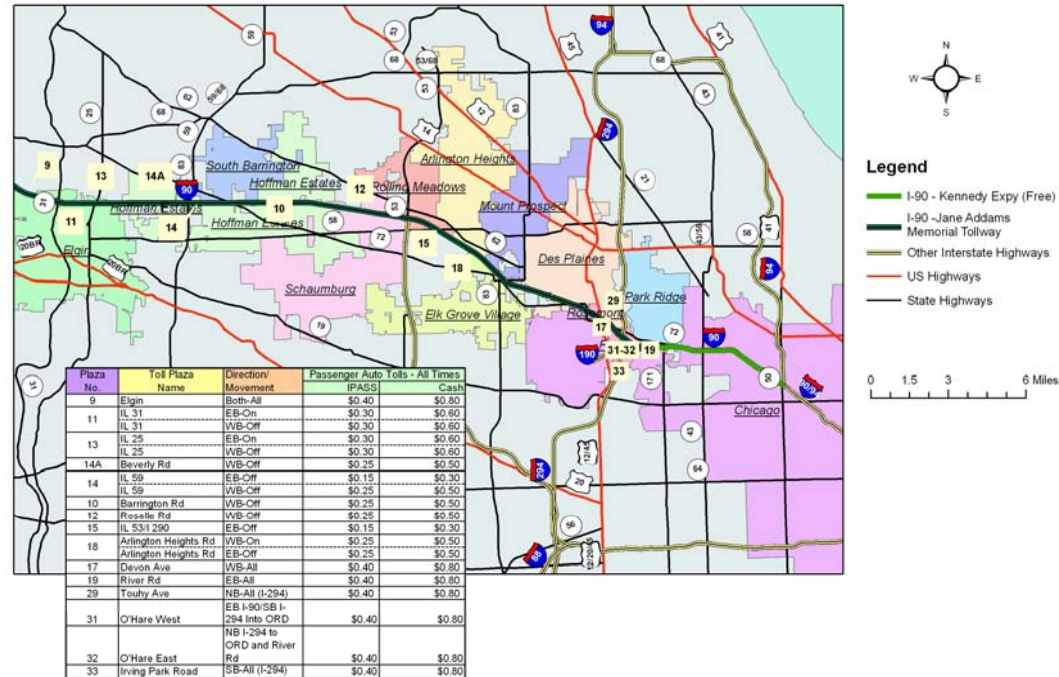
- Congestion Pricing
 - Managed Freeway
 - Transit Services
 - Active Traffic Management
 - Corridor Management
 - Infrastructure Improvements
-

Managed Freeway Approach



Managed Freeway

I-90 Jane Addams Memorial Tollway Existing Toll Rates by Plaza

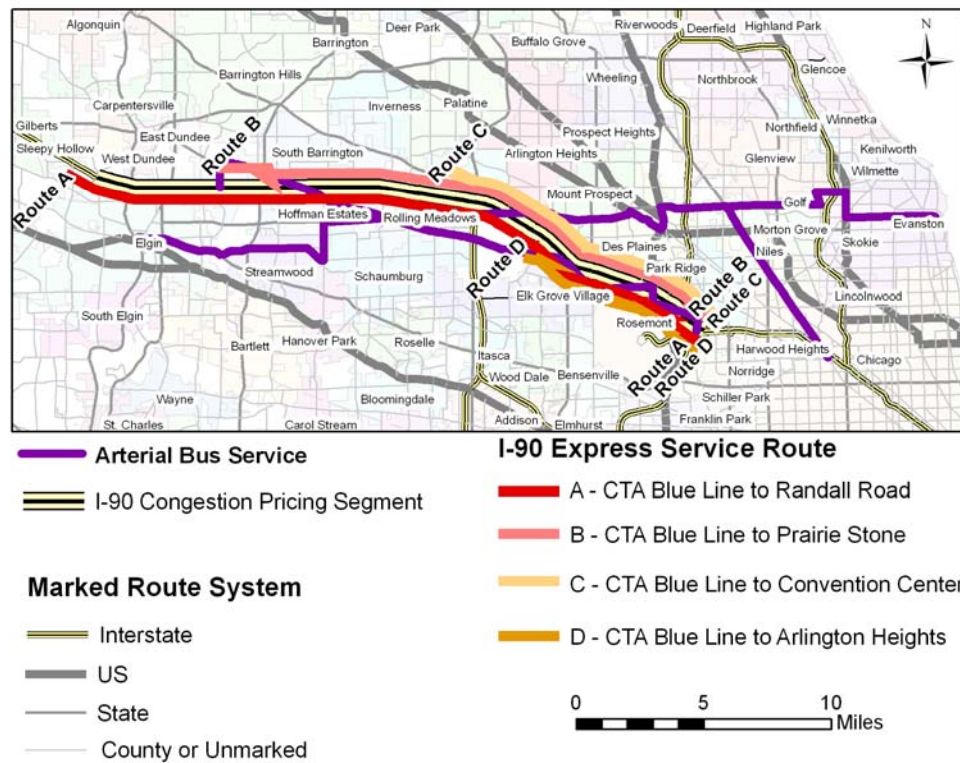


Expected Effects: These Require Viable Alternatives

Expected Congestion Pricing Effects:

- Changes in time-of-day of trips
 - Changes in trip routes to other freeways and to arterials
 - Changes in trip destinations to closer attractions
 - Changes in trip mode to ridesharing, walking, and transit
 - Better highway operations because of lower congestion (more throughput and higher speed)
-

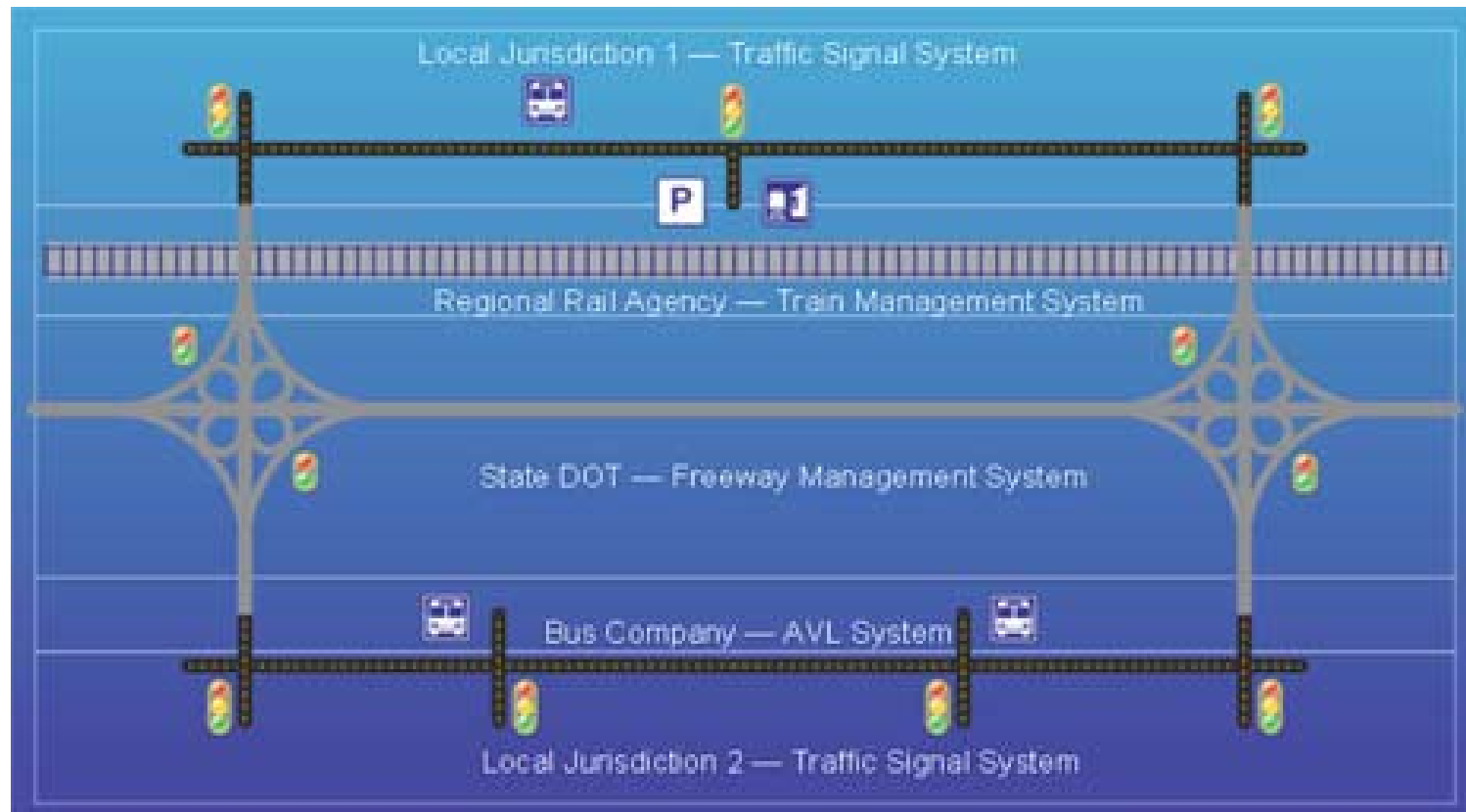
Transit



Transportation Management: Integrated Corridor Management

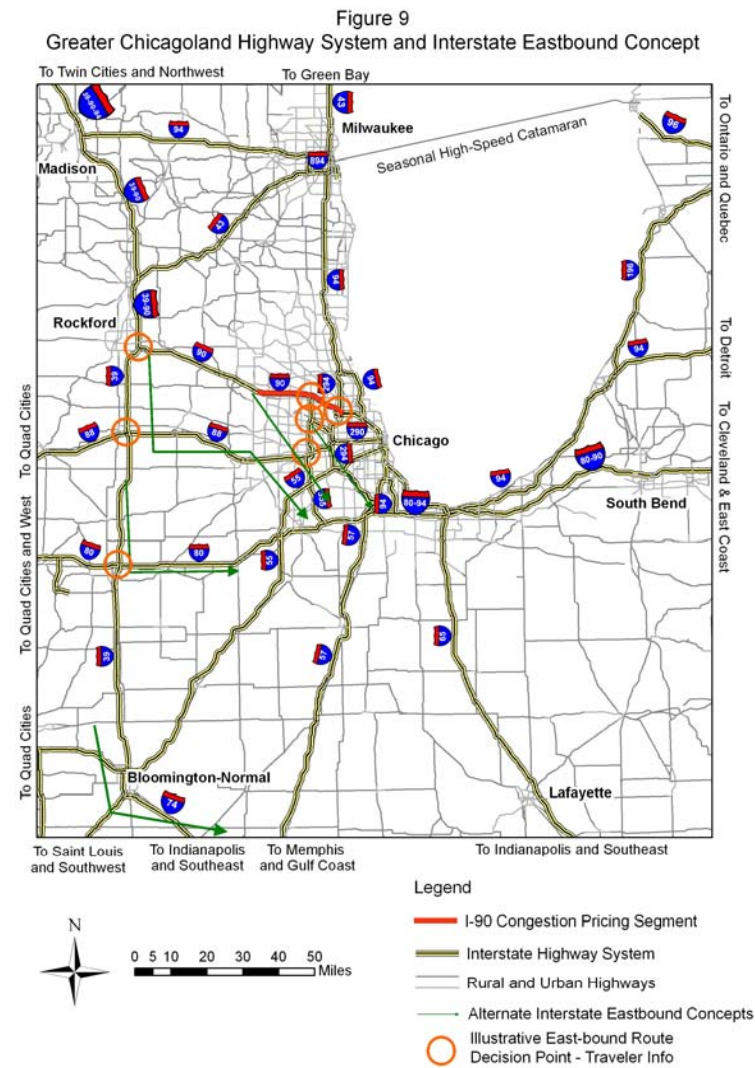
- Multimodal
- Multijurisdictional
- Use of Advanced Communications Technology
- Manages all Corridor Capacity
- Key Focus on Traveler Information
 - Advance Traveler Information
 - Real-time Information

Transportation Management: Integrated Corridor Management



USDOT

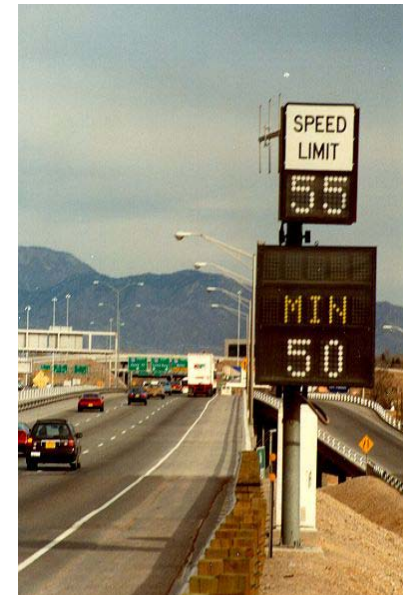
Integrated Corridor Management



February, 2008

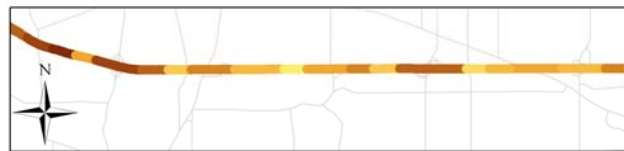
Transportation Management:

Active Transportation Management

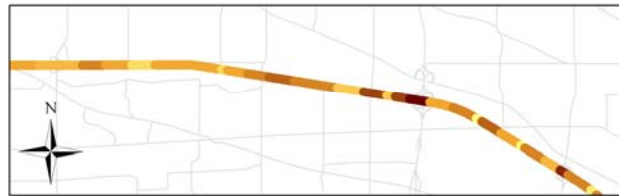


Active Traffic Management

Appendix A
Jane Addams Memorial Tollway Crashes per Mile
2005-2006



Elgin Toll Plaza to Barrington Road



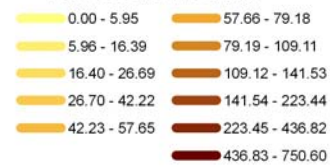
Barrington Road to Arlington Heights Road



Arlington Heights Road to River Road Toll Plaza

Legend

2005-2006 Crashes per Mile



Infrastructure



Congestion Reduction Demonstration

for Metropolitan Chicago

Thank You for Your Time!

Contact: Tom Murtha
tmurtha@cmap.illinois.gov
312-386-8790

www.cmap.illinois.gov



Chicago Metropolitan
Agency for Planning